



LEAD PAPER 2

Presentation Topic: Research And Innovation Through Academia Industry Synergy: Panacea for Technological and National Development In Post-Covid 19 Era

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1. INTRODUCTORY STATEMENT BY ENGR. KOLA BALOGUN

My name is Engineer Kola Balogun, the Chairman MEMMCOL Group, an indigenous Electricity Meters Manufacturing Company. I am a graduate of Electrical/Electronic Engineering and I hold a post graduate diploma from Ladoké Akintola University of Technology. I am a chartered public private partnership specialist from IPS Virginia, United State of America, an honorary Distinguished Member of the Centre for Democracy Governance in Africa (DMCDGA) and an awardee of an Honorary Doctor of Philosophy by University of Janus, USA.

My journey into the powder sector span over two decades experience and it started when I worked in the past with Microchips Nigeria Limited where I rose to a senior management position and later I set up Momas Systems Nigeria Limited in 1995 as an information technology solution provider.

My versatility was put to test in 1996 when I resolved a technical problem on the management system of the National Electric Power Authority (now PHCN) which before then necessitated deployment of experts from South Africa. This singular act opened Vista opportunities for Momas Systems Nigeria Limited in the power sector, as being a robust and formidable metering / energy solution provider.

This is a great and unique opportunity for us and me in particular to share my views on above subject matter and i will like to tag my presentation on the subject matter into various phases as witnessed by the power sector.

2. MOMAS ELECTRICITY METER MANUFACTURING COMPANY LIMITED (MEMMCOL)

An indigenous company incorporated in 2011 and a subsidiary of Momas Systems Nigeria Limited, which was incorporated in 1995. It is the first indigenous company in Sub-Sahara Africa to deploy, install and manage prepayment metering solution for the Power Holding Company of Nigeria (erstwhile National Electric Power Authority). Our other inventions are; Smart WI-FI meter, dual tariff meter, various types of meter enclosures, locally developed electricity billing applications for the electricity distribution companies and recently the Distribution Power Enhancement Panel (DPEP) for both for 11kva and 33kva power sub-stations.



Our subsidiary, Equipment and Protective Application International Limited (EPAIL), is a leading company in the manufacturing security hardware like the protective jackets, Ballistics Helmets, border post guard booth and digitalized surveillance system and it is a member of DICON (Defence Industry Corporation of Nigeria).

3. INTRODUCTION PART OF THE PRESENTATION TOPIC

Research and Innovation are fundamental driving force for the long-term sustainable development of an economy. Unlike other plans and measures for the growth index of any nation, research and innovation which entail implementation of theoretical and practical research work of scholars, is a more sustainable approach towards the economic growth of the country.

Development of a real economy depends Largely on the willingness of the system to undertake a transformative Upgrade system that would never be possible until due recourse and credence is given to Science, Technology and Innovation. In order to appreciate the value of these Constants in the context of industrialization, details of what they are and what they serve as is necessary.

CONCEPTUALIZATION OF TERMS RESEARCH AND INNOVATION

Research and innovation refers to new ideas, equipment or methods that can help meet higher or potential needs. Thus, they have manifested as new technologies, products and processes, or as novel ways of organizing and managing production, or as new marketing and business models. Based on the given definition, the aforementioned features of research and innovation constitute the features of STI.

Innovation and can be divided into three types: Knowledge, Technological and Management innovation, and these three (3) would and can only be led by modern science and technology. Specifically, knowledge research and innovation refers to the original scientific research activities that propose new ideas (i.e. new concepts, ideologies, theories, hypotheses, methods and discoveries) and here is where research and financing of Tertiary Institutions and specific advanced . Technological innovation refers to new production technologies and upgrades on existing technologies for practical application. Management innovation refers to the process by which organizations formulate creative ideas and translate them into useful products, services or operation methods, often because of new management elements (methods, tools or models) or combinations of factors that are introduced into the enterprise management system to effectively achieve organizational goals.

Several studies have been done on the traditional skills of the Nigerian, with evidence regarding the positive contribution of indigenous skills and techniques, particularly to the development and growth of various Nigerian communities before independence. For example, the Iron technology of the Nok culture around Jos, Bauchi, Daima, Kano and Zaria is dated to about 500 B. C. Archeologists have excavated iron spears and axes at Nok, and iron smelting furnaces had been discovered in Taruga, and it is believed to have contributed to the development of agriculture in the region, while there had been ample evidence regarding the use of iron around the Kanji Dam in the present Niger State of Nigeria, around 2nd century B. C. which had contributed to the building of canoe and other agricultural implements around that region among others.

Regrettably, it was only articulated to serve the colonial purpose of manipulating Nigerians to whims and caprices of the colonial masters. This is evident in the statement of Lord Lugard in 1921 thus, "The chief function of government primary and secondary schools among primitive communities is to train the more promising boys from the village schools as teachers for those schools, as clerks for the local native courts, and as interpreters" With this philosophy, it is pertinent to state that colonial education did not support our indigenous technical skills. The British saw Nigeria as a ready market for their spirits, dane guns, mirrors and other goods. But before the advent of colonialism, Nigerians were involved in many aspects of industrial and practical arts, such as hoe making, clothe weaving, bronze smelting and



casting, hides and skin tanning, among others. However, the colonialists discouraged further development of Nigerian technology as they reasoned it was a threat to the smooth marketing of goods imported from Europe.

It is regrettably that over forty years after independence, Nigeria still depends largely on foreign nations for her various technological and industrial needs. Its development is still grossly low in terms of its technological productivity.

A country is said to be technologically backward when it cannot produce capital goods such as tractors, lathe machines, drilling machines, cars, trains, and other earth moving equipments; it is unable to exploit her natural resources except with the help of foreigners who will normally provide the technology and expertise to undertake the exploitation of her natural resources; it is unable to mechanize her agriculture, i.e. crude implements are still used for agricultural production activities by a large percentage of those who are involved in agricultural production; it depends on other countries for the supply of its spare parts for industrial machinery; it exports raw materials to other countries as against finished products; and it is unable to produce her own military hardware with which to defend herself if the need arises.

4. CHALLENGES OF RESEARCH AND INVENTIONS THROUGH ACADEMIA SYNERGY ON TECHNOLOGICAL AND NATIONAL DEVELOPMENT

1.The limiting factor in almost every case has been the lack of quality and vigour on the part of managers." This statement is particularly true for Nigerian leaders whose major concern is not only on how to amass wealth for themselves but also for their unborn generation.

2.The solution to development issues in Nigeria starts with having round pegs occupy round holes, which is a selection and placement issue.

3.Complex technology of the technological development of the newly industrializing countries to draw some important lessons for firms and governments in other developing countries. First, inventing products and processes is not at the center of the technological development needed for successful industrialization. It is at the fringe. What is at the center is acquiring the capabilities needed for technological development.

4.The concern of scientists that members of the higher echelons of government be kept continuously informed about technological development globally.

5.The defects in the legal framework for the protection of innovators in Nigeria

6. The level of innovation and technology in Nigeria is low and the Nigerian patent law is weak.

7. Lack of government policies that would address the challenges in technological innovations.

9. Lack of Modern research facilities and poor human capital development.

5. RESEARCH AND INNOVATION IN RELATION TO MY FIELD AS A POWER BASED ENGINEERING

I am proud to say that through diligence, commitment, patriotism and selflessness, I and my team were able to successfully carried out researches to understand the challenges in the power sector and was able to come up with an Innovation on how to manufacture made in Nigeria Electricity Prepaid Meters within the Engineering content in the country. We are bold to say that we brought the prepaid technology into the country.



Although, it was not an easy ride as there were somany challenges we contented with,some were owing to the fact that the developed countries are always not willing to allow us develop by making technological transfer difficult to bring down to Africa.

Secondly, because of our own black nature of not believing in ourselves, not seeing anything good in home made products and our habit of preferring foreign things over our own locally made products.

Thirdly, misplaced of priority on the part of the government in technological decisions and lopsidedness of government policies which tends to favour importation against our local Industries.

All these above challenges have helped in strengthening our believe in ourselves and capability. And to the glory of God we have evolved over the last two decades to improve on our inventions to further develop other inventions as follows:

1. Dual tariff electricity meters: This is an innovation that allows for electricity meter to have dual billing functionality.
2. Wireless (WIFI) meters: This uses the mobile phone as the UIU to interface with the meter from anywhere in the world, it allows the consumer to use mobile phone to recharge, read, disconnected, monitor the usage pattern and view load profile of the meter remotely. This is proudly our invention.
- 3.Electricity Meter boxes of all kinds: We also manufacture different kinds of meter enclosures made from ABS and SMC materials for Single Phase, three Phase, DT meter and Din rail.
- 4.The Substation Power Enhancement Panel (SPEP) for both 11kva and 33kva power sub-stations: This is an improvement on the power sub-stations to address abuses on the use of conventional fuses by replacing it with an intelligent breaker systems on each of the up-riser to eradicate energy flaring as it addresses commercial and technical energy losses.

6. WAY FORWARD

In order to create an institutional framework for Nigerian Engineers to fully optimised their potentials with the realization that nobody can solve our problems for us except ourselves. Government will need to take a que from the Chinese by looking inward and put the cost of growth to Nigerian Engineers and the institution as one single family to start addressing problems upon problems, challenges upon challenges and ensure that the products that emanated from the research and development in conjunction with the institution are utilized and paid for.

Failure to compensate fully for research and innovation works by the Government will continue to draw us backward as an underdeveloped Nation since there is no readily available policy to compensate research and Innovation. This will mean that we are mortgaging ourselves to the entire world.

This policy should cut across all the Engineering fields be it electrical Engineering, agricultural Engineering, civil Engineering, mechanical Engineering to mention a few.

Now the question is how do we utilize our infrastructure to address our needs?

1. There is an urgent need for various organs of Engineering to stand up to their responsibility to ensure that Government policies are framed to support technological solutions develop locally to address our peculiarity by making use of the products that emanate from technological research and innovation and also pay fully for the innovation.
2. Necessity they say is the mother of Invention, so Government must first of all shut our borders against importation, in a bid to encourage patronage of our locally made products from research and innovation.



NSE Ilaro Branch, 1st National Conference, Ilaro, 2-3 November, 2020.

3. Government needs to put a strict policy in place that will compulsory Technical and Vocational trainings for our youth regardless of whether they are graduates or non-graduates.
4. Government must be ready to fund research and Inventions as well as a partner private entity in commercializing the potentials of the research work and inventions.